

SERVICE QUALITY GUIDELINES
D.P.U. 12-120-C, Attachment A (December 22, 2014)

I. GENERAL

A. Purpose and Scope

The purpose of these guidelines is to ensure that every gas and electric distribution company (referred to separately as “Gas Companies” or “Electric Companies” and collectively as “Companies”) provides adequate service to customers in Massachusetts. Every Company is required to (1) meet the benchmarks established in these guidelines, or be subject to a penalty, (2) report data as defined in these guidelines, and (3) report service quality performance annually.

These guidelines apply to every Gas and Electric Company authorized to do business in the Commonwealth of Massachusetts, unless otherwise indicated. In the event of a conflict between these guidelines and any Orders or regulations of the Department of Public Utilities (“Department”), said Orders and regulations shall govern. These standards supersede those previously issued, including the guidelines issued in D.T.E. 99-84 and D.T.E. 04-116.

B. Definitions

“Chronic Circuit” means a Problem Circuit(s) that appears among the worst five percent of all of an Electric Company’s active Circuits or Feeders for the third reporting year.

“Circuit” or “Feeder” means a system of conductors through which electric energy is delivered to the customer. A “Circuit” or “Feeder” begins at the terminals of the substation protective device or at the terminals of a supply line protective device and ends at the terminals of the customer’s point of interconnection with the utility system. The customers normally supplied by a given circuit do not change circuit assignment for temporary system configuration changes such as maintenance switching or restoration activities. Supply lines that do not have customers directly connected to them (connected only with a protective device such as a recloser) are considered as non-reportable. Conversely, circuits or feeders connected to such supply lines via protective devices such as reclosers have a separate designation and are reportable.

“Circuit Average Interruption Duration Index” or “CKAIDI” means the total minutes of customer interruptions for a circuit divided by the total number of customers connected to the circuit, expressed in minutes per year. If the total number of customers connected to the circuit differs from interruption to interruption, then the average number of customers served by that circuit shall be used. CKAIDI characterizes the average length of time customers connected to a circuit are without electric service during the reporting period.

“Circuit Average Interruption Frequency Index” or “CKAIFI” means the total number of customer interruptions divided by the total number of customers connected to the circuit, expressed in number of interruptions per year. If the total number of customers connected to the circuit differs from interruption to interruption, then the average number of customers served by that circuit shall be used. CKAIFI characterizes the average frequency of interruptions for customers connected to a circuit during a reporting period.

“Class I Odor Call” means calls involving a strong odor of gas throughout a household or outdoor area, or a severe odor from a particular area.

“Class II Odor Call” means calls involving an occasional or slight odor of gas at an appliance.

“Company” or “Companies” refer to investor-owned gas and electric distribution companies unless otherwise indicated.

“Company-Specific Three-Year Mean” means each Company’s three-year average aggregated performance data for the years 2011 through 2013.

“Company-Specific Three-Year Standard Deviation” means the standard deviation of each Company’s aggregated performance data for the years 2011 through 2013.

“Critical Facility” means a building or structure where the loss of electrical service would result in disruption of a critical public safety function. Critical Facilities may include, but are not limited to hospitals, police and fire stations, airports, emergency management agencies, acute/postacute medical facilities with life sustaining equipment, water sewer, pump stations, evacuation centers, and emergency communications centers which serve a life safety function (E911 centers). These facilities are typically required by the town or state to have emergency generation or provisions for emergency generation on site in order to address safety concerns.

“Customer Average Interruption Duration Index” or “CAIDI” means the total duration of customer interruption in minutes divided by the total number of customer interruptions (i.e., total number of interrupted customers), expressed in minutes per year. CAIDI characterizes the average time required to restore service to the average customer per sustained interruption during the reporting period.

“Customer Complaint” means a complaint recorded by the Consumer Division that meets the criteria set forth in Section II.C.

“Customer Credit Case” means any residential Customer Complaint recorded by the Consumer Division relating to the following matters: payment and arrearage management plans, inability to pay, shut-off notices, and terminations, as set forth in Section II.D.

“Customer Equipment Outage” means an electric outage/ interruption caused by customer operation or the failure of customer-owned equipment.

“Customers Experiencing Long Interruption Duration” or “CELID” means the percent of customers who have experienced interruption duration of a given number of hours or more during the reporting period.

“Customers Experiencing Multiple Interruptions” or “CEMI” means the percent of customers who have experienced a given number or more sustained interruptions during the reporting period.

“Downed-Wire Response” means an Electric Company’s response to Priority 1, 2, and 3 Downed-Wire emergencies as reported by public safety agencies.

“Ease of Doing Business” or “EDB” means a measurement of how difficult or easy it is to do business with the Company measured through a survey as described in Section II.

“Electric Distribution Company Service Territory” means the service territory or territories approved by the Department for Electric Companies providing electric service in the Commonwealth.

“Electric Distribution Facility” means plant or equipment used for the distribution of electricity that is not a transmission facility, a cogeneration facility, or a small power production facility.

“Electric Distribution Service” means the delivery of electricity over lines that operate at a voltage level typically equal to or greater than 110 volts and less than 69,000 volts to an end-use customer within the Commonwealth.

“Electric Line Loss” means a total energy loss on a distribution and transmission system calculated as the difference between energy purchased and sold, expressed as a percentage. The total energy loss includes: (1) technical losses (actual load and no load loss in the electric system, consisting of transmission and distribution losses between sources of supply and points of delivery); and (2) nontechnical losses (losses such as meter reading error or theft).

“Emergency Call” means a telephone call to the Company where the caller believes that he or she is confronting special circumstances that might lead to bodily harm and/or system-related damage if the circumstances remain unaddressed. Examples include, but are not limited to, downed wires, gas leaks, and gas odor reports.

“Excludable Major Event” means a major interruption event that meets one of the three following criteria: (1) the event is caused by earthquake, fire or storm of sufficient intensity to give rise to a state of emergency being proclaimed by the Governor (as provided under the Massachusetts Civil Defense Act); (2) any other event that causes an unplanned interruption of service to fifteen percent or more of the Electric Company’s total customers in the Electric Company’s entire service territory; or (3) the event was a result of the failure of another

Company's transmission or power supply system. Notwithstanding the foregoing criteria, an interruption event caused by extreme temperature condition is not an Excludable Major Event.

"First Contact Response" or "FCR" means the measurement of the Company's response to a consumer call, as measured through a survey as described in Section II.

"Glide Path Method" means a benchmarking method with increasing stringency over a ten year period. The ten year period is broken into three, downwardly shifting benchmarks that will apply for three years each, and a fourth period of one year. In the tenth year, the penalty threshold will be the Statewide Mean. The year ten benchmarks will remain in place unless revised by the Department.

"High-Profile Customer" means any customer for whom an interruption to service could pose a threat to public safety (e.g., a hospital, airport, etc.) or a large commercial or institutional customer with a demand of one megawatt or greater.

"IEEE 1366" means the information set forth in the most recent Institute of Electrical and Electronics Engineers' Standard (currently 1366-2012), the Guide for Electric Power Distribution Reliability Indices.

"Interruption" means the loss of electric service to one or more customers connected to the distribution portion of the system. Interruptions are the result of one or more component outages, depending on system configuration.

"Lost Work Time Accident Rate" or "LWTA" means the Incidence Rate of Lost Work Time Injuries and Illness per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

"Momentary Average Interruption Frequency Index" or ("MAIFI") means the total number of customer momentary interruptions divided by the total number of customers served. MAIFI is a measure of momentary interruptions of electric service of less than one minute, expressed in average number of momentary interruptions per customer, per year during the reporting period.

"Momentary Outage" or "Momentary Interruption" means an Outage or Interruption of electric service of less than one minute.

"Non-Emergency Call" means any telephone call to the Company other than an Emergency Call.

"Outage" means the state of a component when it is not available to perform its intended function due to some event directly associated with that component, but may not necessarily result in interruption of service to customers.

“Penalty Zone” means the performance zone in which penalties apply, depending upon the benchmarking method specified for that metric.

“Penalty-Free Zone” means the performance zone where no penalties apply, depending upon the benchmarking method specified for that metric.

“Planned Outage” or “Planned Interruption” means an Outage or Interruption that is scheduled by the Company and of which customers are notified in advance, including, for example, during the connection of new customers or to ensure the safe performance of maintenance activities.

“Poor Performing Circuit” means any distribution Circuit or Feeder that possesses a CKAIID or CKAIIF value(s) for a reporting year that is among the highest (worst) five percent of all of a Company’s active Circuits or Feeders.

“Priority 1 Downed Wires: Life Threatening / Imminent Danger” means an event in which utility equipment is preventing emergency response personnel from performing rescue efforts and/or administering first-aid treatment to a person or persons who may be injured or in danger of being injured.

“Priority 2 Downed Wires: Hindering Emergency Operation” means an event in which utility equipment is preventing emergency response personnel from responding to an emergency situation which is not considered life threatening, yet requires the attention of emergency response personnel.

“Priority 3 Downed Wires: Non-Threatening Electrical Hazard” means an event in which utility equipment creates the need for emergency response personnel and/or apparatus to remain on the scene in order to protect the public from the hazard created by the utility’s equipment.

“Problem Circuit” means any electric distribution Circuit or Feeder that possesses a CKAIID or CKAIIF value(s) for a reporting year that is among the highest (worst) five percent of all of the Company’s active Circuits’ or Feeders’ CKAIID and CKAIIF values for any two consecutive reporting years.

“Restricted Work Day Rate” or “RWD” means the Incidence Rate of Restricted Work cases per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

“Service Appointment” means a mutual agreement between a Company and a customer that shall be recorded in the Company’s business records in the ordinary course of business as to date, time, and location where Company personnel are scheduled to perform a service activity, whether the event is Company-initiated or customer-initiated, and whether the customer must be present or not.

“Service Interruption to a High-Profile Customer” means an Interruption that has a reasonable probability of involving a High-Profile Customer, including a hospital, airport, or large manufacturing, commercial, or institutional customer (with a demand of one megawatt or greater).

“Statewide Mean” means the average of the aggregated performance data filed by all of the Commonwealth’s Distribution Companies in their annual service quality reports (applicable to SAIDI and SAIFI metrics).

“Statewide Standard Deviation” means the standard deviations of the aggregated data filed by the all of the Commonwealth’s Distribution Companies in their annual service quality reports (applicable to SAIDI and SAIFI metrics).

“Statewide Three-Year Mean” means the three-year average aggregated performance data of all of the Commonwealth’s Distribution Companies for the years 2011 through 2013.

“Statewide Three-Year Standard Deviation” means the standard deviations of the aggregated performance data of all of the Commonwealth’s Distribution Companies for the years 2011 through 2013.

“System Average Interruption Duration Index” or “SAIDI” means the total duration of customer interruptions in minutes divided by the total number of customers served by the distribution system, expressed in minutes per year. SAIDI characterizes the average length of time that customers are without electric service during the reporting period.

“System Average Interruption Frequency Index” or “SAIFI” means the total number of customer interruptions divided by the total number of customers served by the distribution system, expressed in interruptions per customer per year. SAIFI characterizes the average number of sustained electric service interruptions for each customer during the reporting period.

“Sustained Outage” or “Sustained Interruption” means an Outage or Interruption of electric service that lasts at least one minute and is not classified as a Momentary Outage or Momentary Interruption.

“Transmission and Distribution Revenues” means revenues collected through the base rates of a transmission and distribution Company.

“Unaccounted-for Gas” means the differential between the amount of gas that enters the Company’s city-gates, and the amount of gas billed to customers, expressed as a percentage of the amount of gas that entered the Company’s city-gates.

“Year” means calendar year unless otherwise noted.

C. Benchmarking Methods

To establish the benchmarks by which Company performance shall be measured, all metrics shall use one of the following four benchmarking methods: (1) Glide Path Method, (2) Fixed Method, (3) Statewide Three-Year Mean Method; or (4) Company-Specific Three-Year Mean Method. Penalty metrics are assigned a benchmarking method and penalty formula described in Section V.

1. Glide Path Method

a. Introduction

The Glide Path Method uses a ten-year Glide Path divided into four time periods: three three-year periods called Glide Path One (“GP1”), Glide Path Two (“GP2”), Glide Path Three (“GP3”); and a final one year period called Glide Path Four (“GP4”). This benchmarking method also requires the calculation of a three-year rolling average (“Rolling Average”) based on a Company’s most recent three years of performance data (performance year plus two preceding years). Failure to meet benchmarks established by this method shall result in a penalty.

b. SAIDI and SAIFI

GP 1 uses the company-specific penalty threshold and penalty maximum benchmarks applicable under D.T.E. 04-116. From the initial level of GP1, incremental improvements in the standard occur, for both the penalty threshold and penalty maximum benchmarks, through the application of calculated Glide Path Improvement Values (“GPIVs”) to determine the benchmarks for GP2, GP3, and GP4. The GPIV required to adjust the penalty threshold benchmark (“GPIV-PT”) equals one third of the difference between the D.T.E. 04-116 penalty threshold benchmark and the year ten penalty threshold benchmark, *i.e.*, the Statewide Mean. The GPIV required to adjust the penalty maximum benchmark (“GPIV-PM”) equals one third of the difference between the D.T.E. 04-116 penalty maximum benchmark and the year ten statewide penalty maximum benchmark (the year ten statewide penalty maximum benchmark is the Statewide Mean plus one Statewide Standard Deviation).

The Statewide Means for SAIDI and SAIFI shall be calculated using the aggregated performance data for these metrics filed by all of the Electric Distribution Companies in their annual service quality reports from 1996-2013, under the D.T.E. 04-116 guidelines.

The Statewide Standard Deviations for SAIDI and SAIFI shall be calculated using the aggregated data for these metrics filed by all of the Electric Distribution Companies in their annual service quality reports from 1996-2013, under the D.T.E. 04-116 guidelines.

GP1 for SAIDI and SAIFI is in effect for the first three years following the issuance of these SQ Guidelines (*i.e.*, for performance years 2015-2017). GP2 is in effect for the subsequent three years (*i.e.*, for performance years 2018-2020). GP3 is in effect for the next subsequent

three years (i.e., for performance years 2021-2023). GP4 is in effect starting in 2024 and will remain in place until revised by the Department.

GP1 Penalty Threshold benchmark ("GP1 PT") is set at each Company's D.T.E. 04-116 standard, i.e., company-specific mean plus one standard deviation using historical, company-specific data from 1996-2005. The GP1 Penalty Maximum benchmark ("GP1 PM") is set at each Company's D.T.E. 04-116 standard, i.e., company-specific mean plus two standard deviations using historical, company-specific data from 1996-2005. No penalty shall apply below the GP1 PT. The Penalty Zone shall commence at GP1 PT and increase to its maximum level at GP1 PM. These benchmarks will remain fixed for the three GP1 years. The lesser of the Rolling Average or the reporting year mean will be entered into the penalty formula as an observed value for each of these metrics.¹

GP2 Penalty Threshold benchmark ("GP2 PT") is set at GP1 PT minus GPIV-PT. GP2 Penalty Maximum benchmark ("GP2 PM") is set at GP1 PM minus GPIV-PM. No penalty shall apply below GP2 PT. The Penalty Zone shall commence at GP2 PT and increase to its maximum level at GP2 PM. These benchmarks will remain fixed for the three GP2 years. The lesser of the Rolling Average or the reporting year mean will be entered into the penalty formula as an observed value.

GP3 Penalty Threshold benchmark ("GP3 PT") is set at GP2 PT minus GPIV-PT. GP3 Penalty Maximum benchmark ("GP3 PM") is set at GP2 PM minus GPIV-PM. No penalty shall apply below GP3 PT. The Penalty Zone shall commence at GP3 PT and increase to its maximum level at GP3 PM. These benchmarks will remain fixed for the three GP3 years. The lesser of the Rolling Average or the reporting year mean will be entered into the penalty formula as an observed value.

GP4 Penalty Threshold benchmark ("GP4 PT") is set at the Statewide Mean. GP4 Penalty Maximum benchmark ("GP4 PM") is set at Statewide Mean plus one Statewide Standard Deviation. No penalty shall apply below GP4 PT. The Penalty Zone shall commence at GP4 PT and increase to its maximum level at GP4 PM. These benchmarks will remain fixed during and after the GP4 year, until further revised by the Department. The lesser of the Rolling Average, or the reporting year mean, will be entered into the penalty formula as an observed value.

2. Fixed Method

This benchmarking method uses a fixed standard that must be achieved by each Company. Failure to meet benchmarks established by this method shall result in a penalty.

¹ Nantucket Electric Company shall continue to report its SAIDI and SAIFI performance under GP1 only, i.e., its SAIDI and SAIFI benchmarks from D.T.E. 04-116 will remain in place for the remainder of the ten-year period identified by the Glide Path Method, or until revised by the Department.

3. Statewide Three-Year Mean Method

This benchmarking method requires the calculation of a fixed Statewide Three-Year Mean and a Statewide Three-Year Standard Deviation. This method requires a Company to meet the average performance reported by all of the Commonwealth's Distribution Companies for the period 2011-2013. Failure to meet benchmarks established by this method shall result in a penalty.

4. Company-Specific Three-Year Mean

This benchmarking method requires the calculation of a Company-Specific Three-Year Mean and a Company-Specific Three-Year Standard Deviation. This method requires a Company to meet the average performance it reported for the period 2011-2013. Failure to meet the benchmarks established by this method shall result in a penalty.

II. CUSTOMER SERVICE AND SATISFACTION PERFORMANCE METRICS

A. Service Appointments Kept As Scheduled

Each Company shall gather data and report statistics regarding the number of four-hour and all-day Service Appointments, available, scheduled, and kept on-time. Each Company shall report the percentage of scheduled four-hour and all-day service appointments kept as scheduled.

A Service Appointment is kept if the Company representative arrives at the customer's premises within either the four-hour window or the all-day window originally scheduled by the Company and the customer. Same day appointments, emergency work orders, tagalongs, multiple work orders for a single site, and work orders where the Company has not scheduled a Service Appointment with the customer (*i.e.*, cold calls such as collections) shall be excluded from the data reported for this metric. Service Appointments that are rescheduled at least 24 hours prior to the appointment time with the assent of the customer, or by the customer within 24 hours of the appointment time, shall be excluded from the data reported for this metric. For Service Appointments rescheduled due to emergencies, Companies may submit a request to the Department for permission to exclude these Service Appointments from the data reported for this metric. Application for this exception must be filed within 30 days of the emergency with accompanying documentation to the Director, Consumer Division, Department of Public Utilities, One South Station, Boston, MA 02110.

When a Service Appointment is not kept as scheduled due to customer unavailability, the Company must count it as a missed appointment in the data reported for this metric, unless a Company representative has made a visit to the customer's premises, found the customer not at home, and left a note that the Company had attempted to attend its scheduled Service Appointment. The Company must submit a request to the Department for permission to exclude these Service Appointments from the data reported for this metric. Application for this exception must be filed within 30 days of the missed appointment with accompanying documentation to the Director, Consumer Division, Department of Public Utilities, One South

Station, Boston, MA 02110.

Service Appointment data shall be compiled and aggregated monthly. Each Company shall report Service Appointment data annually.

The Department will assign a benchmarking method and set benchmarks for Service Appointments after a three-year period of data collection (i.e., 2015-2017).

B. Customer Complaints

Customer Complaints shall be defined as any customer contact with the Department that is categorized as a Customer Complaint by the Department's Consumer Division using the following criteria:

- (1) the customer making the Customer Complaint provides his or her identity and is a current or former customer of the Company against which the Customer Complaint has been lodged;
- (2) the customer has contacted the Company from which the customer receives distribution service prior to lodging a Customer Complaint with the Department;
- (3) the matter involves an issue or issues over which the Company has control;
- (4) the matter is not a simple customer inquiry;
- (5) the matter is not a circumstance wherein the Company correctly applied the applicable law, orders, rules, standards, procedures; and
- (6) the matter is not a Customer Credit Case as defined in Section II.D.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Complaints per 1,000 residential and commercial/industrial customers and will provide this data to each Company on a monthly basis. Once the Department provides this data to a Company, the Company has twenty (20) days to dispute the classification of a complaint as a Customer Complaint. Requests for exclusions shall be made to the Director, Consumer Division, Department of Public Utilities, One South Station, Boston, MA 02110.

This metric uses the Statewide Three-Year Mean benchmarking method and penalty formula, as described in Section V.B.3. Companies shall achieve a performance level equal to the Statewide Three-Year Mean for the years 2011-2013. Commercial and Industrial Complaints will be included in the penalty calculation after a three-year period of data collection (i.e., 2015-2017).

C. Customer Credit Cases

Customer Credit Cases shall be defined as any residential Customer Complaint relating to the following matters: payment and arrearage management plans, inability to pay, shut-off notices, and terminations. Matters relating to failure to issue a credit or a refund will not be categorized as a Customer Credit Case.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Credit Cases per 1,000 residential customers, and will provide data to each Company on a monthly basis. Once the data is provided to a Company, the Company has twenty (20) days to dispute the classification of a matter as a Customer Credit Case. Requests for exclusions shall be made to the Director, Consumer Division, Department of Public Utilities, One South Station, Boston, MA 02110.

This metric uses the Statewide Three-Year Mean benchmarking method and penalty formula as described in Section V.B.3. Companies shall achieve a performance level equal to the Statewide Three-year Mean for the years 2011-2013.

D. Surveys

1. Penalty-Eligible Customer Satisfaction Surveys

Each Company shall report the results of two surveys to the Department: (1) a customer satisfaction survey of a statistically representative sample of residential customers within the Company's service territory; and (2) a survey of customers randomly selected from those customers who have contacted the Company's customer service department within the year in which service is being measured. The latter representative sample shall be newly drawn from customers contacting the Company's customer service area in the year previous and shall be conducted with a sample of respondents who are redialed after having concluded a contact with the Company's customer service department. The surveys, if conducted internally, shall be pre-approved by the Department regarding the method and customer questions.

For the Residential Customer Satisfaction Survey, the following question shall be asked: "Using a scale where 1 = very dissatisfied and 7 = very satisfied; how satisfied are you with the service, excluding price, that you are receiving from Company Name?"

For the customer-specific survey, the following question shall be asked: "Using a scale where 1 = not, and 7 = very; how courteous was the customer service department of Company Name?"

For the customer-specific survey, the following question shall be asked: "Using a scale where 1 = not, and 7 = very; how well did the customer service department of Company Name respond to your call?"

Each Company shall report the arithmetic mean of the responses to the three survey questions, as well as the arithmetic mean of each question, in each Company's annual service quality report. Each Company shall include the results from all available previous years of the survey up to a maximum of ten years.

This metric uses the Fixed Benchmarking Method and Fixed Penalty Formula as described in Section V.B.2. Each Company shall achieve an average score of 5 or better. Penalties start at an average score of 4.9, with the maximum penalty applying at an average score of 4.

2. Customer Service Factor Surveys

Each Company shall survey a sample of all customers who contact the Company. Survey results shall be tabulated monthly and quarterly. Each Company shall report survey results annually.

The survey shall include two questions regarding "First Contact Response" and "Ease of Doing Business." The scripts for these questions must be approved by the Department. Application for a variance shall be made to Director, Consumer Division, Department of Public Utilities, One South Station, Boston, MA 02110, three months prior to the calendar year for which the variance is being sought.

Each question shall be considered a Customer Service Factor Survey. The questions will be finalized during the Consumer Metric Working Group. The survey results shall be provided for reporting purposes only. No benchmarks shall be calculated for the Customer Service Factor Surveys and no penalty method has been assigned to this metric.

III. ASSUMPTIONS FOR CALCULATING ELECTRIC RELIABILITY METRICS

For the purpose of calculating SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI, the following assumptions and criteria shall be used in accumulating Interruption data:

- A. Customer Equipment Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- B. Planned Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- C. Excludable Major Events shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI, and MAIFI;
- D. Momentary Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and, CEMI;
- E. The beginning of an Interruption shall be recorded at the earlier of an automatic

alarm or the first report of no power;

- F. The end of an Interruption shall be recorded at that point when power to customers is restored;
- G. Interruptions involving primary and secondary distribution circuits shall be included in the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI (Interruptions involving electric lines that operate at 69,000 volts and above shall be excluded);
- H. Where only part of a circuit experiences an Interruption, the number of customers affected shall be estimated, unless an actual count is available. When power is partially restored, the number of customers restored also shall be estimated unless an actual count is available; and
- I. When customers lose power as a result of the process of restoring power (such as switching operations and fault isolation), the duration of these additional Interruptions shall be included in the duration calculation, but the additional number of Interruptions shall not be included in the frequency calculation.

IV. RELIABILITY AND SAFETY PERFORMANCE METRICS

A. Electric Reliability and Safety

1. System Level Reliability

Each Electric Company shall measure SAIDI and SAIFI on an annual basis in accordance with Section III and the Glide Path Benchmarking Method and Penalty Formula in Section V.B.1. SAIDI and SAIFI will be subject to monetary penalty as specified in Section V.C.

The Electric Companies shall continue to collect IEEE reliability data as a reporting metric only. IEEE calculations shall be based on Sustained Interruptions (i.e., Interruptions more than one (1) minute).

2. Circuit Level Reliability

To address Poor Circuit Remediation (“PCR”), each Electric Company shall identify the five percent of Circuits or Feeders in its service territory with the most Interruptions (i.e., duration and frequency) as measured by CKAIDI and CKAIFI. Electric Companies that do not incur SAIDI or SAIFI penalties in a given year must evaluate whether CKAIDI and CKAIFI penalties apply. Data for all Circuits or Feeders that were active at any time during the reporting year shall be included in the PCR calculation for that reporting year.

Any Circuit(s) or Feeder(s) that appears among the worst five percent of all the Company’s Circuits or Feeders for two consecutive years shall be labeled as a Problem Circuit(s). Any Problem Circuit(s) that appears among the worst five percent of all the Company’s Circuits or

Feeders for the third reporting year shall be labeled a Chronic Circuit. If the mean of the CKAIDI/CKAIFI values of the Chronic Circuits is greater than Statewide Mean plus two Statewide Standard Deviations in year three, the Electric Company shall be subject to a monetary penalty.

The Statewide Mean applicable to CKAIDI and CKAIFI shall be same as that which is applicable to SAIDI and SAIFI, i.e., using the aggregated performance data for these metrics filed by all of the Electric Distribution Companies in their annual service quality reports from 1996-2013, under the D.T.E. 04-116 guidelines.

For the purposes of this metric, each Electric Company shall continue using data from applicable prior reporting years. All penalties will be apportioned as provided in Section V.C, below. All penalty calculations will use the following penalty formula:

For any Chronic Circuits, if the mean of the CKAIDI/CKAIFI values of the Chronic Circuits is greater than the Statewide Mean plus two Statewide Standard Deviations, then the maximum penalty for CKAIDI and CKAIFI will apply.

Penalty for CKAIDI = $11.25\% * (2.5\% \text{ of Company's total Annual Transmission and Distribution Revenue for the applicable year})$

Penalty for CKAIFI = $11.25\% * (2.5\% \text{ of Company's total Annual Transmission and Distribution Revenue for the applicable year})$.

3. Downed-Wire Response

Each Electric Company shall measure and report its response to Priority 1, 2, and 3 Downed-Wires calls. The Downed-Wire Response metric uses the Fixed Benchmarking Method and Fixed Penalty Method.

Each Electric Company shall meet an average response time of 1 hour for 98 percent of Priority 1 Downed-Wire calls. Failure to meet this standard will result in a penalty of 50% of the T&D penalty allocated for this metric.

Each Electric Company shall meet an average response time of 2 hours for 95 percent of Priority 2 Downed-Wire calls. Failure to meet this standard will result in a penalty of 50% of the T&D penalty allocated to this metric.

In calculating Downed-Wire Response, Companies may exclude from the calculation data relating to (1) emergency calls received from individuals other than the municipal officials; (2) emergency calls involving a facility not belonging to the Electric Company and the Electric Company has coordinated a response through the telephone or cable companies; and (3) instances in which an Electric Company has dispatched personnel to respond to a Priority call in a timely manner, but emergency response is hindered/delayed due circumstances beyond the Company's control.

In responding to Downed-Wire calls, the Electric Companies shall follow the protocols approved in Investigation by the Department of Public Utilities regarding the development of Emergency Response Time Protocols for Investor Owned Distribution Companies, D.P.U. 08-112, Letter Order at 1-2 (December 23, 2010). For purposes of reporting information and calculating penalties related to Downed-Wire Response, the Electric Companies shall complete the template in Attachment B.

B. Gas Safety

There is one reliability metric subject to a penalty and there are three reliability metrics subject only to reporting that are specific to Gas Companies: (1) Odor Call Response, (2) Odor Call Response Time Exceeded; (3) Odor Call Response Overrides, and (4) Odor Call Response Time Increments.

1. Odor Call Response

Each Gas Company shall respond to 97 percentage of all Class I and Class II Odor Calls in 60 minutes. For the purpose of calculating performance, only the first call reporting an individual odor-related condition shall be counted. Odor Call Response will be subject to the Fixed Benchmarking Method and Fixed Penalty Method in Section V.B.2.

2. Reporting Requirements for Odor Call Response

Each Gas Company shall provide two monthly reports and two annual summary reports to the Department, as described below.

a. Odor Call Response Time Exceeded

Each Gas Company shall submit a monthly exception report, identifying all the Class I and Class II Odor Call incidents during the month where the Company did not meet the 60-minute standard including (1) the date of the Odor Call, (2) the location, (3) the time by which the Gas Company's response exceeded the 60-minute standard, and (4) the reason for exceeding the 60-minute standard.

b. Odor Call Response Overrides

Each Gas Company shall submit a monthly exception report identifying the instances in which a Gas Company employee responding to an Odor Call failed to properly activate the time measurement device in the responding vehicle for those Companies possessing a time measurement device. This report shall include: (1) the date of the Odor Call, (2) the time the Odor Call was received, (3) the time the Company dispatched employee(s) to the location, (4) the time the Gas Company employee arrived at the location, (5) the time the on-site button was activated, (6) the reason for not activating the on-site button appropriately, and (7) the person who authorized and/or entered the override time.

c. Annual Summary Reports

Each Gas Company shall submit an annual summary report, with its Annual SQ Report, summarizing each set of monthly reports (i.e., Odor Call Response Time Exceeded and Odor Call Response Overrides).

d. Odor Call Response Time Increments

Each Gas Company shall report on an annual basis all Odor Call Response times in 15-minute intervals. Each Gas Company shall include the total number of Odor Calls responded to in 15, 30, 45, and 60 minutes as well as the percentage of annual Odor Calls responded to in each time increment.

C. Worker Safety Metrics: Lost Work Time Accident Rate and Restricted Work Day Rate

a. Lost Work Time Accident Rate

Each Company shall measure its Lost Work Time Accident Rate. The Lost Work Time Accident Rate shall be reported annually and this information will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

b. Restricted Work Day Rate

Each Company shall measure its Restricted Work Day Rate. The Restricted Work Day Rate shall be reported annually and this information will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

V. REVENUE PENALTIES

A. Applicability

Each of the penalty formulas below identify the penalty metrics to which the penalty formula applies.

B. Penalty Formulas

1. Glide Path Method

This revenue penalty formula is applicable to SAIDI, SAIFI.

$$\text{Penalty} = ((\text{Observed value} - \text{GPPT}) / (\text{GPPM} - \text{GPPT}))^2 * \text{Maximum Penalty}$$

Where:

Observed Value = current year performance or three year average (i.e., mean of current year performance and preceding two years' performance), whichever is less

GPPT = the applicable Glide Path penalty threshold benchmark (GP1 PT; GP2 PT; GP3 PT; and GP4 PT)

GPPM= the applicable Glide Path penalty maximum benchmark (GP1 PM; GP2 PM; GP3 PM; and GP4 PM)

Maximum Penalty= 2.5 percent of Annual Transmission and Distribution Revenues of a Company allocated to the metric, as apportioned by the table in Section II.C.

2. Fixed Penalty Formulas

Odor Call Response, Downed-Wire Response, and Customer Satisfaction Surveys have a fixed statewide standard that if not met will result in a penalty.

a. Fixed Penalty Formula for Class I and Class II Odor Call Reponse

The revenue penalty formula for the Odor Call Response metric shall be:

Class I and Class II Odor Call Penalty = Penalty Factor from Table * Maximum T&D penalty allocated to metric, as apportioned by the table in Section II.C.

Table 1-Gas Odor Call Response

Statewide Standard	Observed Value	Penalty Factor
97%	≤96%	.50
97%	≤95%	.75
97%	≤94%	1.00

b. Fixed Penalty Formula for Downed-Wire Response

Each Electric Company shall meet an average response time of 1 hour for 98 percent of Priority 1 Downed Wires. Failure to meet this standard will result in a penalty of 50% of the T&D penalty allocated for this metric, as apportioned by the table in Section II.C.

Each Electric Company shall meet an average response time of 2 hours for 95 percent of Priority 2 Downed Wires. Failure to meet this standard will result in a penalty of 50% of the T&D penalty allocated to this metric, as apportioned by the table in Section II.C.

c. Fixed Penalty Formulas for Customer Satisfaction Surveys

Each Company shall achieve an average score of 5.0. Failure to meet this standard will result in a penalty of 50% of the T&D penalty allocated for this metric, as apportioned by the table in

Section II.C. Failure to achieve an average score of 4.0 will result in a penalty of another 50% of the T&D penalty allocated for this metric, as apportioned by the table in Section II.C.

3. Statewide Three-Year Mean Penalty Formula

This revenue penalty formula is applicable to Customer Complaints.

If: (Observed Result – Statewide Three-Year Mean) is a positive value.

Penalty = $(0.25 * ((\text{Observed Result} - \text{Statewide Three-year Mean}) / \text{Statewide Three-Year Standard Deviation})^2) * \text{Maximum Penalty}$

Observed Result = the average actual performance measure achieved in year_y, rounded to the applicable decimal place;

Statewide Three-Year Standard Deviation = standard deviation of the historical average result; and

Maximum Penalty = $(\text{PCL}_M) * (\text{AR} * 0.025)$

Where:

PCL_M = Performance category liability for the metric expressed as a percentage (derived from Section V.C); and

AR = Annual Transmission and Distribution Revenues of a Company for the applicable year.

4. Company-Specific Three-Year Mean Penalty Formula

This revenue penalty formula is applicable to Customer Credit Cases.

If: (Observed Result – Company-Specific Three-Year Mean) is a positive value.

Penalty_M = $(0.25 * ((\text{Observed Result} - \text{Company-Specific Three-Year Mean}) / \text{Company-Specific Three-Year Standard Deviation})^2) * \text{Maximum Penalty}$

Observed Result = the average actual performance measure achieved in year_y, rounded to the applicable decimal place;

Company-Specific Three-Year Standard Deviation = standard deviation of the historical average result; and

$$\text{Maximum Penalty} = (\text{PCL}_M) * (\text{AR} * 0.025)$$

Where:

PCL_M = Performance category liability for the metric expressed as a percentage (derived from Section V.C); and

AR = Annual Transmission and Distribution Revenues of the Company for the applicable year.

C. Apportionment of Penalty Among Performance Metrics

The following table reflects the percentage of the overall two and one half percent of Transmission/Distribution Revenue specified in G. L. c. 164, § 11 allocable to each penalty metric.

<u>Electric Companies</u>	
Metric	Penalty Percentage
SAIDI	22.5
SAIFI	22.5
CKAIDI	11.25*
CKAIFI	11.25*
Downed-Wire Response Priority 1	5
Downed-Wire Response Priority 2	5
Service Appointments	10
Customer Complaints	20
Customer Credit Cases	10
Customer Satisfaction Surveys	5
*Penalty may only be assessed if Electric Company is not subject to SAIDI or SAIFI penalty in a given year.	
<u>Gas Companies</u>	
Metric	Penalty Percentage
Class I/Class II Odor Call Response	55
Service Appointments	10
Customer Complaints	20
Customer Credit Cases	10
Customer Satisfaction Surveys	5

VI. DATA REPORTING REQUIREMENTS

A. Reliability, Electric Line Loss, and Safety Indices and Rates

Each Company shall report on an annual basis SAIDI, SAIFI, CKAIFI, CKAIDI, CAIDI, LWTA, RWD, Electric Line Loss, Downed-Wire Response, Unaccounted-for Gas, FCR, EDB, Service Appointments Kept, Customer Satisfaction Surveys, Customer Complaints, Customer Credit Cases, and percentage of all Class I and Class II Odor Calls responded to in 60 minutes or less. These reports shall be submitted in accordance with Section VII, below.

All calculated performance results of all metrics shall be reported to the 1000th decimal place, three places after the decimal point. Similarly, all values entered in the penalty formula shall be rounded to the 1000th decimal place. For inputs and outputs of other calculations the Companies conduct, the Companies shall not round values other than what Excel automatically truncates.

Additionally, Electric Companies shall report in their annual SQ reports, their increased capabilities for measuring MAIFI, CEMI, and CELID. For MAIFI, each Electric Company shall (1) submit a status report on its increased ability to measure momentary outages; and (2) report in the annual SQ report any and all MAIFI data that it was able to collect in the reporting year. For CEMI and CELID, each Electric Company shall submit a status report on its ability to accurately determine its CEMI and CELID data, including as a percentage of the total number of customers served by the Company.

For annual reporting of Electric Line Loss, each Electric Company shall provide and support with sufficient substantiation:

- (1) its electric distribution and transmission line loss value separately for technical losses and non-technical losses,
- (2) electric transmission and distribution line loss value in megawatts by voltage class at system peak, and
- (3) the parameters, assumptions, and methodological approaches used in the calculations.

B. Annual Excludable Major Events

Each Electric Company shall identify and report on an annual basis any Interruptions that are considered Excludable Major Events. For each Excludable Major Event, each Electric Company shall report the total number of customers affected, the service area affected, the number of customers without service at periodic intervals, the time frame of longest customer Interruption, and the number of crews used to restore service on a per shift basis. These reports shall be submitted in accordance with Section VII, below.

C. Poor Circuit Remediation

Each Electric Company shall identify and report on an annual basis its poor performing circuits. The report on PCR shall include the following information for the most recent three years:

- (1) the feeder or circuit identification number;
- (2) the feeder or circuit location;
- (3) the reason(s) why the circuits performed poorly during the reporting year;
- (4) the number of years that the circuit(s) performed poorly;
- (5) the steps that are being considered and/or have been implemented to improve the reliability of these circuits; and
- (6) the CKAIDI or CKAIFI value for the specific circuit(s) whether mitigated or not mitigated. In addition, the Companies shall continue to provide the detailed circuit data, filed in an active Excel format. In this data, active circuits and the top worst performing circuits in each year must be clearly identified.

The reports shall be submitted in accordance with Section VII , below.

D. IEEE Reporting Requirement

Each Electric Company shall compile its SAIDI and SAIFI measures in accordance with these guidelines. In addition, each Electric Company shall compile and calculate its SAIDI and SAIFI performances using IEEE (currently 1366-2012) standards and shall report these measures to the Department annually in accordance with Section VII, below.

E. Department's Outage and Accident Reporting Procedures

1. Reporting Electric Service Interruptions

Each Electric Company shall continue to maintain and update its distribution and transmission Interruption data consistent with the Department's Outage and Accident Reporting Procedures.

Each Electric Company shall include every sustained distribution and transmission Interruption that occurs within or impacts its service territory. Each Electric Company shall update within a one-hour period, from the beginning of the Interruption, every Interruption that results in 500 or more customer-interruption hours or that results in a service Interruption to a High-Profile Customer or Critical Facility. All other Interruptions shall be updated within a 24-hour period from the beginning of the Interruption. Data shall be revised to reflect updated/analyzed Interruption information within seven (7) days of the initial Interruption reporting.

All Interruption reports shall include the following information:

1. Date filed
2. Company name
3. District/Division name
4. Location of Interruption (City/town where fault occurred)
5. Street name
6. Substation name and ID
7. Circuit number ID
8. Circuit branch ID
9. Voltage level, such as to the nearest: transmission, 35kV, 25kV, 12kV, 5kV, Secondary, etc.
10. Circuit type (OH/UG/Customer owned)
11. Original number of customers affected
12. Current number of customers affected (show zero if restoration is completed)
13. Actual duration (in hours)
14. Total customer Interruption hours
15. Date and time service out
16. Date and time service in
17. Reason for Interruption (nature/cause of Interruption)
18. Failed or damaged device/equipment
19. Indicate if the Interruption was planned/unplanned/intentional
20. Weather condition
21. Primarily affected load type (Residential/Industrial/Commercial/mix)
22. Whether the Interruption affected a Critical Facility/ High Profile customer (yes/no)
23. Whether the Interruption is an Excludable Major Event (yes/no)
24. Whether an injury occurred as a result of the event (yes/no)
25. Name of the person responsible for filling out the report
26. Time restoration commenced
27. Expected duration
28. Town/City Official notification (yes/no)
29. Name of notified/contacted person
30. Telephone number of notified/contacted person(s)

Each Electric Company shall file annually, with its Annual SQ Report, a compact disc that contains a compilation of all Interruptions for the filing year, in working Microsoft Excel spreadsheet format. Each Company shall submit these reports in accordance with Section VIII.

2. Reporting Accidents

In compliance with the requirements of G.L. c. 164, § 95, each Company shall report within a 24-hour period of an accident the following information:

- (1) time and date of accident;
- (2) time and date of the notice to the Department;
- (3) location of the accident;
- (4) a detailed description of the accident including information about fatalities, injuries, facilities and third-party property damage; and
- (5) the name and telephone number of a Company employee who may be contacted about the accident.

These standards supersede previous Interruption and Accident Reporting Procedures. Each Company shall submit these reports in accordance with Section VIII.

3. Reporting Emergency Response Times

Each Company shall compile and report an annual average of its response times to formal emergency incidents reported by official emergency personnel. The Companies will calculate the total duration of time between notification of a system incident and an arrival response by the Company. Companies shall also report the location (street address) and nature of each incident. Such data shall be compiled by city and town, and reported monthly, with an annual average duration calculated and reported to the Department, and shall be submitted in accordance with Section VII. The Companies must provide information per this section only if that information is not already provided based on Downed-Wire calls reported per Section IV.A.3., and Odor Calls reported per Section IV.B.2.

VII. SUBMITTING ANNUAL REPORTS TO THE DEPARTMENT

The annual SQ reports shall be submitted to the Department by March 1 of each year reflecting the data from the previous calendar year(s) and shall be submitted in the following manner:

- A. the original to Secretary;
- B. one (1) copy to the Electric Power Division Director;
- C. one (1) copy to the Rates and Revenue Requirements Division Director;
- D. one (1) copy to the Gas Division Director;
- E. one (1) copy to the Consumer Division Director;

- F. one (1) copy to the Pipeline Safety Division Director; and

A copy of the report should also be submitted to the Department in electronic format using one of the following methods: (1) by e-mail attachment to dpu.efiling@state.ma.us, or (2) on a CD-ROM. The text of the e-mail or CD-ROM must specify: (1) the docket number of the proceeding (if known); (2) the name of the person or Company submitting the filing; and (3) a brief descriptive title of the document (e.g., annual service quality report). The electronic filing should also include the name, title, and telephone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. All data must be reported in active spreadsheets using Microsoft Excel. All documents submitted in electronic format will be posted on the Department's website: <http://www.mass.gov/dpu>.

VIII. SUBMITTING INTERRUPTION AND ACCIDENT REPORTS TO THE DEPARTMENT

The Interruption and Accident reports required by these standards shall be submitted to the Department in the following manner:

- A. Consistent with the Department's Outage Reporting Protocol ("ORP"), on-line through ORP databases maintained by the Electric and Gas Companies. If website access is not available, an electronic copy of the report shall be submitted to the Department, by using one of the following methods: by e-mail attachment to dpu.efiling@state.ma.us; or compact disc, to the Director of Electric Power Division, Department of Public Utilities, One South Station, Boston Massachusetts 02110. The text of the e-mail or disc label must specify: (1) an easily identifiable case caption; (2) docket number; (3) name of person or Company submitting the filing; and (4) a brief descriptive title of document (e.g., Company Name outage or interruption report). The electronic filing should also include the name, title and phone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. Data or spreadsheet responses should be compatible with Microsoft Excel; and
- B. One (1) copy of each report submitted to the Consumer Division Director, Department of Public Utilities, One South Station, Boston Massachusetts 02110.

For electric service Interruptions that are required to be reported within a one-hour period as described in Section V.F.I, each Electric Company shall, in addition to submitting a written report, contact by telephone the Electric Power Division Director, Consumer Division Director, Executive Director, or one of the Commissioners of the Department to convey the information surrounding the Interruption.

IX. DEPARTMENT CONTACT INFORMATION ON CUSTOMER BILLS

Each Company is directed to include language placed on the back side of customer bills, which notifies customers of (a) their ability to contact the Department regarding service quality complaints or questions, and (b) the Department's website address: www.mass.gov/dpu.

X. CUSTOMER SERVICE GUARANTEE

If a Company fails to keep a Service Appointment as defined in Section II.B or to notify customers of planned service Interruptions, the Company shall pay \$100 directly to those customers affected. The Company shall automatically credit the payment to the affected customer's account. The Company shall provide to the Department on a monthly basis information regarding the number of Customer Service Guarantee payments made to customers and the reason for each missed appointment. The information shall be reported to Director, Consumer Division, Department of Public Utilities, One South Station, Boston Massachusetts 02110.

XI. COMPANY EXEMPTION REQUESTS

A Company may request that the Department grant an exemption from a particular portion of the SQ Guidelines for that reporting year. The Company must file the request for exemption 60 days from the date of the event to be exempted.

XII. GENERAL RESERVATION

The Department retains the discretion to waive or depart from any provision of the SQ Guidelines.